

TABLE 3-1

COAL ANALYSIS REPORT SUMMARIES - ROGERS SEAM

Date	Mine	Moisture Content (%)	Ash (%)	Hydrogen (%)	Oxygen (%)	Carbon (%)	Sulphur (%)	Nitrogen (%)	Volatile Matter (%)	BTU (/lb)	Condition
1966 (1)	SP	14	13							10,700	As Received
1965 (2) (P)	R2	10.7	4.9			43.4			41		
1965 (2) (U)	R2		4.9	6.1	21.6	65.2	0.5	1.7			Dry Basis
1965 (2) (P)	R2	14.4	7.8			43			34.8	13,000	Dry Basis
1966 (5)	SP	16.3	12.9							12,130	Dry Basis
1967 (5)	R2	14	14.6							11,640	
1967 (5)	R2	13.4	13.1							11,825	
1970	R2	15	8.9			44.6	0.5		41.9	12,400	Dry Basis
1970 (6)	SP	10.8	7.5			47.9	0.65		44.6	13,110	Dry Basis
1970 (6)	SP	11.1	12			49.3	0.83		38.7	12,700	Dry Basis
1971 (4)	SP	15.4	9.6			39.8	0.5		40.5	12,400	Dry Basis
1971 (4)	SP	12.4	9.4			40.9	0.6		41.3	12,400	Dry Basis
1971 (4)	SP	13	11.5			39.8	0.6		40.5	12,400	Dry Basis

References:

- (1) Guteberlet Laboratories, Seattle, WA
- (2) USBM Reports
- (3) J. M. Knisely Engineering Corporation
- (4) Washington State Department of Highways (MTL)
- (5) University of Washington
- (6) Bennets Chemical Laboratory

Key:

- R2 - Rogers No. 2 Mine
- SP - Stock pile
- (P) - Proximate Analysis
- (U) - Ultimate Analysis

TABLE 3-2

ROGERS SEAM - MINE MAPS

Map No.	Year	Description
14	4/22/66	Plan of Rogers 1/2 showing Rogers 3 in development. Shows surface "strip pit" between Rogers portal and return air slope.
27	Undated	Working drawings for Rogers No. 1 development and booming.
236.A	10/1/60	NE extension surface plan showing hoists and bunkers.
236.B	10/1/60	Plan and sectional views of Rogers No. 1 and 2 slopes, major northern fault, and sump.
354	4/24/61	Plan of Rogers 1 and 2 showing Rogers 2 in development.
357	3/29/60	Plan of Rogers 1 and 2 showing Rogers 2 in development.
392	4/22/66	Plan of Rogers 1 and 2 showing Rogers 3 in development.
657	2/27/74	Shows A-A, A-B sections from #672.
662	Undated	Working drawings, Rogers No.2. Shows pillaring operations from fault (chute #8) to chute #39.
672	Undated	Shows plan of caved area above Rogers seam and Landsburg workings.
692	Approx. 1974	Working Map of 3rd and 4th levels. Shows pattern of development and booming. Shows extent of caving. Indicates 80-to-90 % extraction. One ton = 2 cu. yds.
704	Undated	Superintendents Plan, Rogers No.2
DNR 1	1975	Superintendent's Plan, Rogers No. 2.
DNR 2	1965	Section through Rogers Mine at abandonment.
DNR 3	Unknown	Section showing 1st and 2nd level development and mining.
DNR 4	1970	Section showing 1st, 2nd, 3rd, and 4th level development and mining.

TABLE 3-3

SEQUENCE OF MINING IN THE FIRST LEVEL

Approx Date	Activity	Notes
Pre-1959	Complete Rogers Slope.	Work halted due to fault (Morris, J., 1992).
Mar, 1959	Mine 130' rock tunnel to intersect coal.	No inflow of water when mining through fault. Probably same fault encountered in landsburg (Falk, 1992).
Apr, 1959	Complete return air slope.	
Jan, 1960	Complete gangway and counter to southern end of 1st level.	Mining controlled by need to promote drainage. Presence of gravel in this area prevented further mining. Holes not drilled through hardpan (Falk, 1992; Eltz, 1992). One hole reported making 7-15 gpm (Simmons, 1992); other holes wet.
Jun, 1960	Complete area designated as "coal extracted by booming".	Area at surface caved (2). Coal reported as "100% extracted " in this area (Eltz, 1992).
Dec, 1960	Complete booming from 1150 to 1250 ft.	Chutes holed through to surface, surface caved. Reported able to see daylight from gangway.
Jul, 1962	Complete booming to rock tunnel.	Surface caved extensively. Small pillars remain where coal pillars left underground for mine fire control. Caved zone periodically filled from the surface.
Unknown	Coal stripped from southern end of major fault using truck mounted drilling rig and dragline.	Area between base of "strip pit" and No. 1 return slope shown as removed.
Unknown	Coal stripped to north of fault (depth = 30')	Coal stripped approx 100 ft north of Rogers No. 2 portal.
1965 to 1966	Water level tunnel and counter constructed. Coal boomed to base of "strip pit".	

TABLE 3-4

SEQUENCE OF MINING IN THE SECOND LEVEL

Approx Date	Activity	Notes
1960	Mine Rogers No. 2 Slope and Return Air Slope.	
Dec, 1961	Mine gangway and counter to southern end of mine; complete development crosscuts and chutes.	150 ft of solid coal left between upper crosscut in 2nd level and gangway in Rogers No.1. Rogers No.1 kept dewatered and periodically inspected. Test holes bored to define proximity to gravel layer at southern end of level.
Sep, 1963	Complete booming to below southern limit of 1st level workings.	Areas caved through to surface (subsequently backfilled). Pillars left in 2nd level from directly below southern limit of 1st level for approximately 250 ft towards south. Mud inflow occurred August, 1963. Bulkheads and stoppings set to prevent inflow and control fires. Extraction ratios from 80 to 90 % reported.
Feb, 1965	Complete booming to rock tunnel.	Pillars left for fire control (Simmons, 1992). Often remnant pillars chosen to coincide with fault (Simmons, 1992). Holes drilled through to 1st level gangway to drain water (Simmons, 1992, Mine Maps). Caved zone inspected daily and periodically backfilled (Simmons, 1992). Booming round drilled within few feet of first level; often broke through caving to gangway.
Jun, 1965	Complete booming to No. 2 return air-slope.	Pillars left for mine fire control. Coal between top of booming round and 1st level gangway reportedly caved without blasting.
Nov, 1966 to Jul, 1967	Mine area beneath No. 2 Slope 300 ft north of portal.	Area mined from 3rd level with extensive caving.

TABLE 3-5

SEQUENCE OF MINING IN THE THIRD AND FOURTH LEVELS

Approx Date	Activity	Notes
1962	Mine Rogers No.3 Access slope and return airway to surface.	Slope and aircourse for the Rogers No. 3 level were driven to the surface from the Rogers No. 2 gangway.
May, 1966	Mine 3rd gangway and counter 4,950 ft to northern property boundary.	Level 3 is referred to in the Coal Mine Inspectors Reports as the Rogers No. 3, 2nd level.
1967	Drive Rogers No.3 slope to 4th level.	Level 4 is referred to in the Coal Mine Inspectors Reports as the Rogers No. 3, 3rd level.
Jul, 1967	Boom 3rd level to beneath bottom of Rogers No.2 slope.	Surface in this area initially overlain by 13 ft of gravel. Zone extending 300 ft north of Rogers No. 2 portal shown as caved to surface; this was also reported in Coal Mine Inspector Report A23, and may be the location referred to By Archie Eltz when daylight could be seen from the 3rd level. Portions of caved zone shown as backfilled on the Mine Superintendent's drawings.
Dec, 1967	Boom 3rd level to rock tunnel	Four inch holes drilled through 90 ft pillar to 2nd level for drainage.
Jan, 1969	Boom 3rd level to beneath northern end of 1st level zone designated as "Coal Extracted by Booming".	Four inch holes drilled through 50 to 60 ft pillar to 2nd level for drainage.

TABLE 3-5

SEQUENCE OF MINING IN THE THIRD AND FOURTH LEVELS (Continued)

Approx Date	Activity	Notes
Jul, 1967 to Sep, 1969	Mine 4th level gangway and counter to major fault.	End of 4th level approximately 3200 ft from bottom of Rogers No.3 slope. gangway finished approximately one year before booming started.
June, 1970	Boom 3rd level to within 250 ft of Rogers No. 3 slope.	Four inch holes drilled through 50 to 60 ft pillar to 2nd level for drainage.
Sep, 1970	First booming round on 4th level.	First two booming rounds shown as caved to 3rd level. Area immediately above these two rounds in 3rd level shown as left in place due to hanging wall collapse in 3rd level crosscut.
Oct, 1974	Complete booming on 4th level.	Small (15 ft) pillars left between booming rounds. Four inch test holes drilled through 100 ft pillar to 3rd level.
1975	Complete mining 3rd level, Rogers No.3 slope pillar.	Pillars extracted prior to abandonment of level.
1975	Complete mining 2nd level, Rogers No.3 slope pillar.	Pillars extracted prior to abandonment of level.
Dec, 1975	Abandon Rogers No. 3 Mine	On December 12, 1975 the Rogers No. 3 slope and return airway were sealed by blasting from the surface. Remaining voids were filled using a dozer.

TABLE 3-6

LANDSBURG MINE - ROGERS SEAM
MINE/WASHED COAL TONNAGES

Year	Mine, Rogers No.	Raw Coal (tons)	Clean Coal (tons)	Seam Thkns (ft)	Notes
1956					
1957					
1958					
1959	1	23205	15217		Washington State DNR, OFR 84-6, Plate 2 of 2
1960	1	17960	12573	7.5	Palmer Coking Coal Records
1960	2	12400	8678	7.5	Palmer Coking Coal Records
1961	1	14200	8516	7.5	Palmer Coking Coal Records
1961	2	49900	32472	7.5	Palmer Coking Coal Records
1962	1	21920	14375	ND	Mine Inspectors Reports
1962	2	23865	15763	ND	Mine Inspectors Reports
1963	2	42620	28152		Washington State DNR, OFR 84-6, Plate 2 of 2
1963	3	8160	5383		Washington State DNR, OFR 84-6, Plate 2 of 2
1964	2	39120	25838		Washington State DNR, OFR 84-6, Plate 2 of 2
1964	3	46418	22780		Washington State DNR, OFR 84-6, Plate 2 of 2

TABLE 3-6

LANDSBURG MINE - ROGERS SEAM
MINE/WASHED COAL TONNAGES (Continued)

Year	Mine, Rogers No.	Raw Coal (tons)	Clean Coal (tons)	Seam Thkns (ft)	Notes
1965	2	38610	25502		Washington State DNR, OFR 84-6, Plate 2 of 2
1965	3	17910	8824		Washington State DNR, OFR 84-6, Plate 2 of 2
1966	2	25100	16574		Washington State DNR, OFR 84-6, Plate 2 of 2
1966	3	47440	23372		Washington State DNR, OFR 84-6, Plate 2 of 2
1967	2				
1967	3	79230	39069		Washington State DNR, OFR 84-6, Plate 2 of 2
1968	2				
1968	3	70426	34698		Washington State DNR, OFR 84-6, Plate 2 of 2
1969	2				
1969	3	78881	38862		Washington State DNR, OFR 84-6, Plate 2 of 2
1970	3	45594	22463		Washington State DNR, OFR 84-6, Plate 2 of 2
1971	3	65517	30105	8	Palmer Coking Coal Records
1972	3	59525	28572	8	Palmer Coking Coal Records
1973	3	31336	16295	8	Palmer Coking Coal Records
1974	3	27884	14500	8	Palmer Coking Coal Records
1975	3	9188	5051	8	Mine closed 8/20/75.